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TITLE: Lubricated sliding element, especially an adjusting shim for an i. c. engine valve operating mechanism, has a hard carbon-based film surface containing nitrogen and-or oxygen and-or having a low hydrogen content

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PATENT-ASSIGNEE: MIYAKE S (MIYAI), NISSAN MOTOR CO LTD (NSMO)

PRIORITY-DATA: 1999JP-0102205 (April 9, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE <u>10017459</u> A1	October 26, 2000		012	F16C033/12
DE <u>10017459</u> C2	March 28, 2002		000	F16C033/12
JP 2000297373 A	October 24, 2000		008	C23C016/27

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
DE 10017459A1	April 7, 2000	2000DE-1017459	
DE 10017459C2	April 7, 2000	2000DE-1017459	
JP2000297373A	April 9, 1999	1999JP-0102205	

INT-CL (IPC): C23 C 16/27; F01 L 1/20; F16 C 33/12; F16 H 53/06

ABSTRACTED-PUB-NO: DE 10017459A

BASIC-ABSTRACT:

NOVELTY - A lubricated sliding element, comprises a hard carbon-based film with a surface region containing nitrogen and/or oxygen and/or having a low hydrogen content.

DETAILED DESCRIPTION - A sliding element, used in contact with lubricating oil, comprises a substrate bearing a hard carbon-based film having a surface region which contains 0.5-30 at.% nitrogen and/or oxygen and/or not more than 10 at.% hydrogen. INDEPENDENT CLAIMS are also included for the following:

(i) an adjusting shim for use in an i. c. engine valve operating mechanism and comprising the above sliding element; and

(ii) a process for producing the above sliding element.

Preferred Features; The substrate may consist of silicon nitride or steel.

USE - The sliding element is useful as a lubricated i. c. engine component, especially an adjusting shim for a valve operating mechanism.

ADVANTAGE - The nitrogen and/or oxygen presence and/or the restricted hydrogen content in the film provide a low friction coefficient (μ) of not more than 0.07 and long term high wear resistance in contact with lubricant, the nitrogen and/or oxygen providing polar groups for physical or chemical adsorption of oiliness agents in lubricating oils.

DESCRIPTION OF DRAWING(S) - The drawing shows a sliding element according.

sliding element 1

silicon nitride or steel substrate 2

hard carbon-based film 3

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EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.1/5

DERWENT-CLASS: M13 Q62

CPI-CODES: M13-H;